

Application

Witherspoon 10/715,607

07/21/2005

L3 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:609952 CAPLUS
DOCUMENT NUMBER: 141:157893
ENTRY DATE: Entered STN: 30 Jul 2004
TITLE: Novel monofunctional polyethylene glycol aldehydes
useful for pegylation
INVENTOR(S): Rosen, Perry; Nho, Kwang
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S.
Ser. No. 661,268.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C08G065-32
US PATENT CLASSIF.: 525389000; 525403000
CLASSIFICATION: 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 63
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| US 2004147687 | A1 | 20040729 | US 2003-715607 | 20031118 <-- |
| KR 2003048293 | A | 20030619 | KR 2001-78244 | 20011211 |
| US 2003153694 | A1 | 20030814 | US 2002-303260 | 20021125 |
| US 2004034188 | A1 | 20040219 | US 2003-431294 | 20030507 |
| US 6916962 | B2 | 20050712 | | |
| US 2004122164 | A1 | 20040624 | US 2003-661268 | 20030912 |
| PRIORITY APPLN. INFO.: | | | KR 2001-78244 | A 20011211 |
| | | | US 2002-348452P | P 20020116 |
| | | | US 2002-381503P | P 20020517 |
| | | | US 2002-407741P | P 20020903 |
| | | | US 2002-303260 | A2 20021125 |
| | | | US 2003-431294 | A2 20030507 |
| | | | US 2003-661268 | A2 20030912 |

PATENT CLASSIFICATION CODES:

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| US 2004147687 | ICM | C08G065-32 |
| | INCL | 525389000; 525403000 |
| US 2004147687 | NCL | 525/389.000; 525/403.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U <-- |
| US 2003153694 | NCL | 525/523.000; 558/260.000; 560/157.000; 564/060.000 |
| | ECLA | C08G065/329; C08G065/331; C08G065/333U |
| US 2004034188 | NCL | 528/230.000; 528/250.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U |
| US 2004122164 | NCL | 525/054.100; 528/230.000; 525/526.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U |

ABSTRACT:

The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

SUPPL. TERM: polyethylene glycol aldehyde therapeutic active protein

INDEX TERM: pegylation
Polyoxyalkylenes, preparation
ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
BIOL (Biological study); PREP (Preparation); USES (Uses)
 (aldehyde derivs.; novel monofunctional polyethylene
glycol aldehydes for pegylation of therapeutically active
proteins)

INDEX TERM: Proteins
ROLE: THU (Therapeutic use); BIOL (Biological study); USES
(Uses)
 (pegylation of; novel monofunctional polyethylene glycol
aldehydes for pegylation of therapeutically active
proteins)

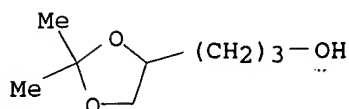
INDEX TERM: 6318-30-5P 58320-73-3P 67665-18-3P
 , Methoxypolyethylene glycol acetic acid 67665-19-4P
 , Methoxypolyethylene glycol ethyl acetate
124661-64-9P 135649-01-3P
146167-55-7P 544706-94-7P
544706-96-9P 544707-00-8P
544707-01-9P 544707-03-1P
544707-04-2P 544707-06-4P
658083-74-0P 658083-75-1P
727741-77-7P
ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)
 (novel monofunctional polyethylene glycol aldehydes for
pegylation of therapeutically active proteins)

INDEX TERM: 79-10-7DP, Acrylic acid, addition products with
methoxypolyethylene glycol, ester with hydroxysuccinimide,
amide derivative, urethane propionaldehyde 6066-82-6DP
 , N-Hydroxysuccinimide, ester with methoxypolyethylene
glycol acrylic acid addition product, amide derivative, urethane
propionaldehyde 9004-74-4DP, Methoxypolyethylene
glycol, addition products with acrylic acid, ester with
hydroxysuccinimide, amide derivative, urethane propionaldehyde
41365-75-7DP, displacement reaction products with
hydroxysuccinimide esterified methoxypolyethylene glycol
acrylic acid addition product, deacetalized compound
533881-58-2P 544706-95-8P
544706-97-0P 544706-99-2P
544707-02-0P 544707-05-3P
544708-06-7P
ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
BIOL (Biological study); PREP (Preparation); USES (Uses)
 (novel monofunctional polyethylene glycol aldehydes for
pegylation of therapeutically active proteins)

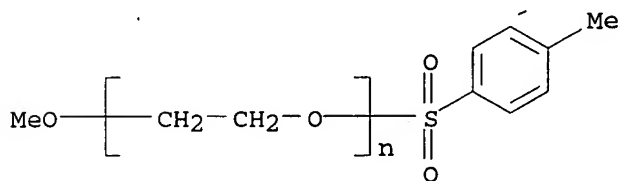
INDEX TERM: 67-64-1, Acetone, reactions 98-59-9, Tosyl
chloride 105-36-2, Ethyl bromoacetate
1659-31-0; Di-2-pyridyl carbonate 6066-82-6
 , N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl
chloroformate 9004-74-4, Methoxypolyethylene
glycol 14533-84-7, Pentafluorophenyl
trifluoroacetate 14697-46-2, Pentane-1,2,5-triol
19060-15-2 32315-10-9, Triphosgene
41365-75-7 80506-64-5 125220-94-2
 , Methoxypolyethylene glycol propionic acid
ROLE: RCT (Reactant); RACT (Reactant or reagent)
 (novel monofunctional polyethylene glycol aldehydes for

pegylation of therapeutically active proteins)

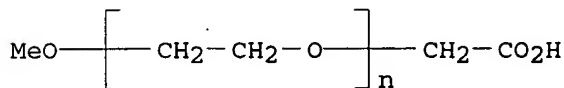
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 Methoxypolyethylene glycol acetic acid 67665-19-4P,
 Methoxypolyethylene glycol ethyl acetate 124661-64-9P
 135649-01-3P 146167-55-7P 544706-94-7P
 544706-96-9P 544707-00-8P 544707-01-9P
 544707-03-1P 544707-04-2P 544707-06-4P
 658083-74-0P 658083-75-1P 727741-77-7P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (novel monofunctional polyethylene glycol aldehydes for pegylation of
 therapeutically active proteins)
 RN 6318-30-5 CAPLUS
 CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl- (9CI) (CA INDEX NAME)



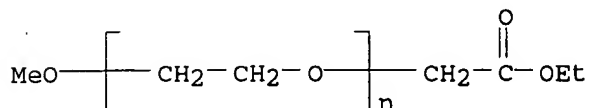
RN 58320-73-3 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[(4-methylphenyl)sulfonyl]- ω -
 methoxy- (9CI) (CA INDEX NAME)



RN 67665-18-3 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)- ω -methoxy- (9CI)
 (CA INDEX NAME)

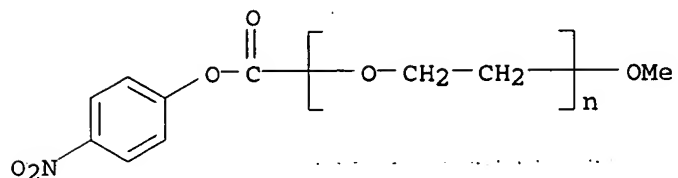


RN 67665-19-4 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -(2-ethoxy-2-oxoethyl)- ω -methoxy-
 (9CI) (CA INDEX NAME)

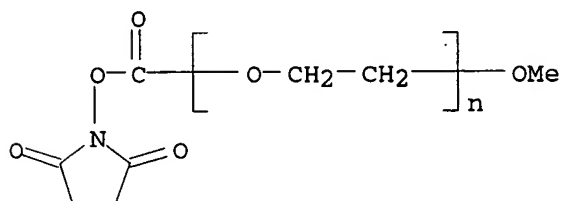


RN 124661-64-9 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[(4-nitrophenoxy)carbonyl]- ω -

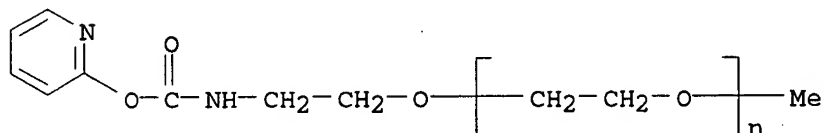
methoxy- (9CI) (CA INDEX NAME)



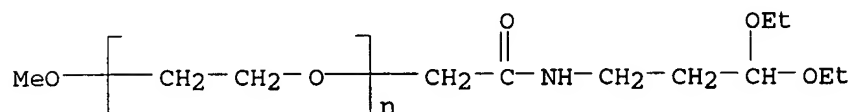
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| RN | 135649-01-3 | CAPLUS | |
| CN | Poly(oxy-1,2-ethanediyl), α -[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME) | | |



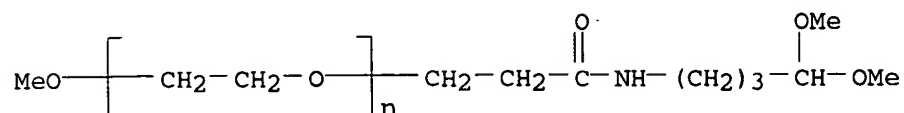
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| RN | 146167-55-7 | CAPLUS |
| CN | Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[2-pyridinyloxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME) | |



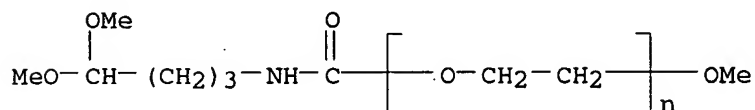
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|----|--|--------|
| RN | 544706-94-7 | CAPLUS |
| CN | Poly(oxy-1,2-ethanediyl), α -[2-[(3,3-diethoxypropyl)amino]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME) | |



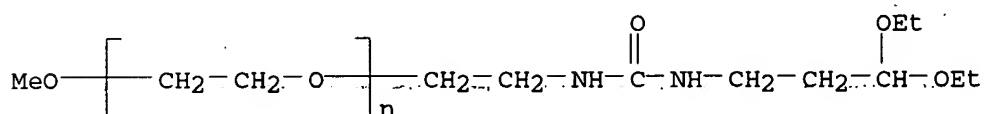
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|----|---|--------|
| RN | 544706-96-9 | CAPLUS |
| CN | Poly(oxy-1,2-ethanediyl), α -[3-[(4,4-dimethoxybutyl)amino]-3-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME) | |



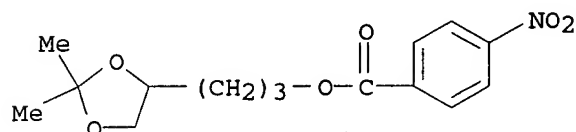
RN 544707-00-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[[(4,4-dimethoxybutyl)amino]carbonyl]-
 ω -methoxy- (9CI) (CA INDEX NAME)

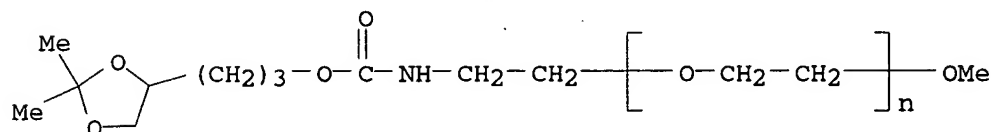
RN 544707-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[(3,3-diethoxypropyl)amino]carbonyl
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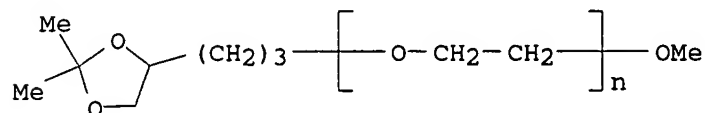
RN 544707-03-1 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl-, 4-nitrobenzoate (9CI) (CA INDEX
NAME)

RN 544707-04-2 CAPLUS

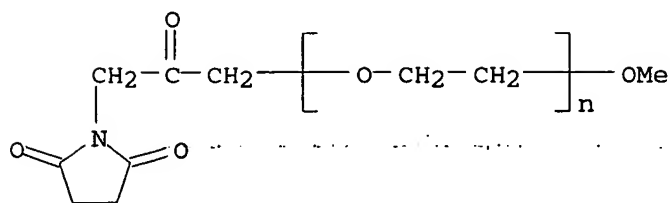
CN Poly(oxy-1,2-ethanediyl), α -[2-[[[3-(2,2-dimethyl-1,3-dioxolan-4-
yl)propoxy]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-06-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,2-dimethyl-1,3-dioxolan-4-
yl)propyl]- ω -methoxy- (9CI) (CA INDEX NAME)

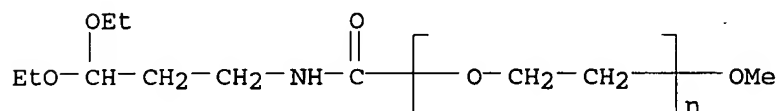
RN 658083-74-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,5-dioxo-1-pyrrolidinyl)-2-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME)



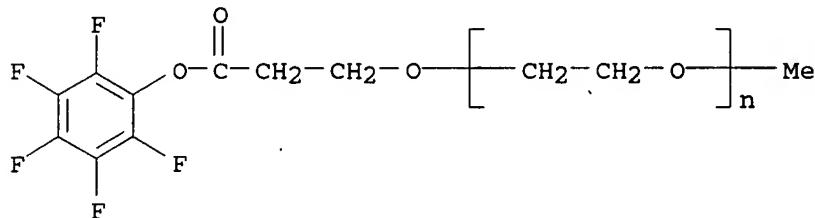
RN 658083-75-1 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[3-(3-diethoxypropyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)



RN 727741-77-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-(pentafluorophenoxy)propoxy]- (9CI) (CA INDEX NAME)

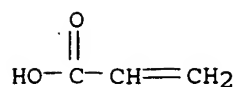


IT 79-10-7DP, Acrylic acid, addition products with methoxypolyethylene glycol, ester with hydroxysuccinimide, amide derivative, urethane propionaldehyde 6066-82-6DP, N-Hydroxysuccinimide, ester with methoxypolyethylene glycol acrylic acid addition product, amide derivative, urethane propionaldehyde 9004-74-4DP, Methoxypolyethylene glycol, addition products with acrylic acid, ester with hydroxysuccinimide, amide derivative, urethane propionaldehyde 41365-75-7DP, displacement reaction products with hydroxysuccinimide esterified methoxypolyethylene glycol acrylic acid addition product, deacetalized compound 533881-58-2P 544706-95-8P 544706-97-0P 544706-99-2P 544707-02-0P 544707-05-3P 544708-06-7P

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

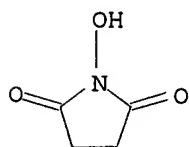
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CN 2-Propenoic acid (9CI) (CA INDEX NAME)

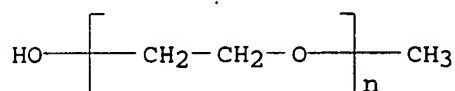


RN 6066-82-6 CAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)

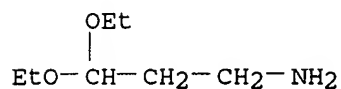


RN 9004-74-4 CAPLUS

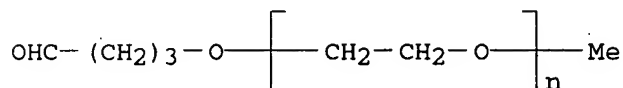
CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -hydroxy- (9CI) (CA INDEX NAME)

RN 41365-75-7 CAPLUS

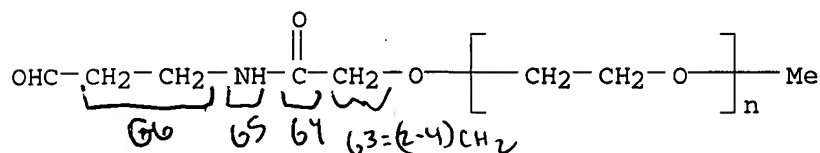
CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)



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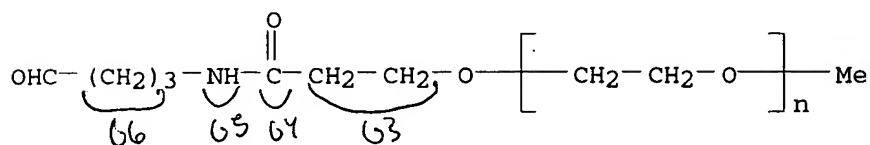
CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -(4-oxobutoxy)- (9CI) (CA INDEX NAME)

RN 544706-95-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)

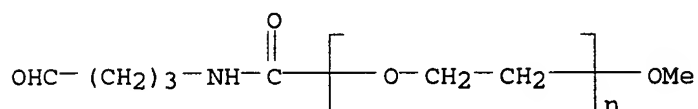
RN 544706-97-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



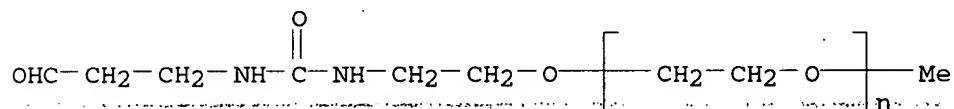
RN 544706-99-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[[(4-oxobutyl)amino]carbonyl]- ω -methoxy]- (9CI) (CA INDEX NAME)



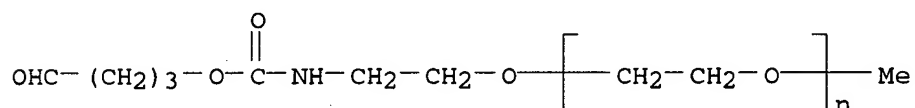
RN 544707-02-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



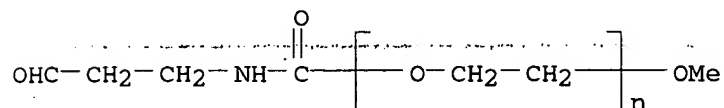
RN 544707-05-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544708-06-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[[(3-oxopropyl)amino]carbonyl]- ω -methoxy]- (9CI) (CA INDEX NAME)



IT 67-64-1, Acetone, reactions 98-59-9, Tosyl chloride
 105-36-2, Ethyl bromoacetate 1659-31-0, Di-2-pyridyl
 carbonate 6066-82-6, N-Hydroxysuccinimide 7693-46-1,
 4-Nitrophenyl chloroformate 9004-74-4, Methoxypolyethylene

glycol 14533-84-7, Pentafluorophenyl trifluoroacetate

14697-46-2, Pentane-1,2,5-triol 19060-15-2

32315-10-9, Triphosgene 41365-75-7 80506-64-5

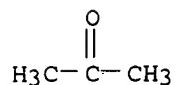
125220-94-2, Methoxypolyethylene glycol propionic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

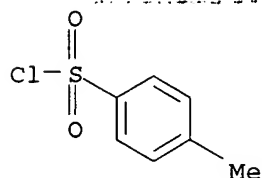
RN 67-64-1 CAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)



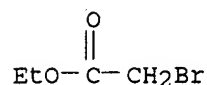
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CN Benzenesulfonyl chloride, 4-methyl- (9CI) (CA INDEX NAME)



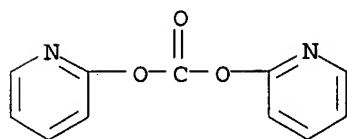
RN 105-36-2 CAPLUS

CN Acetic acid, bromo-, ethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



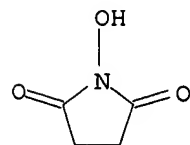
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CN 2-Pyridinol, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)

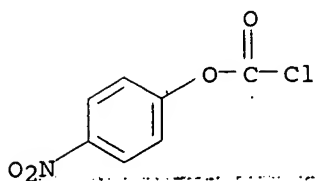


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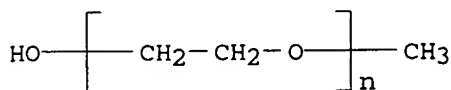
CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



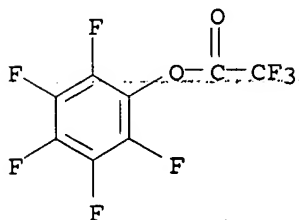
RN 7693-46-1 CAPLUS
 CN Carbonochloridic acid, 4-nitrophenyl ester (9CI) (CA INDEX NAME)



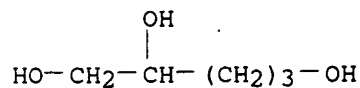
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 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -hydroxy- (9CI) (CA INDEX NAME)



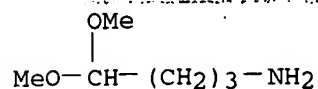
RN 14533-84-7 CAPLUS
 CN Acetic acid, trifluoro-, pentafluorophenyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



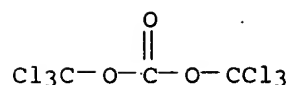
RN 14697-46-2 CAPLUS
 CN 1,2,5-Pentanetriol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 19060-15-2 CAPLUS
 CN 1-Butanamine, 4,4-dimethoxy- (9CI) (CA INDEX NAME)

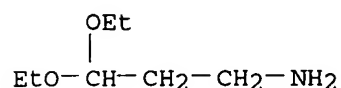


RN 32315-10-9 CAPLUS
 CN Methanol, trichloro-, carbonate (2:1) (9CI) (CA INDEX NAME)

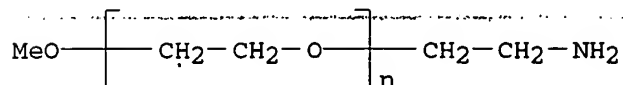


RN 41365-75-7 CAPLUS

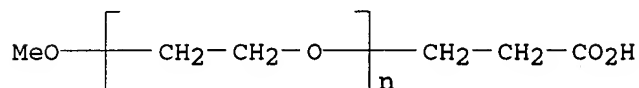
CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)



RN 80506-64-5 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-aminoethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

RN 125220-94-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-carboxyethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

L3 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:513373 CAPLUS

DOCUMENT NUMBER: 141:72062

ENTRY DATE: Entered STN: 25 Jun 2004

TITLE: monofunctional polyethylene glycol aldehydes,
preparation and protein conjugate

INVENTOR(S): Rosen, Perry; Nho, Kwang H.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S.
Pat. Appl. 2004 34,188.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: C08G065-00

SECONDARY: C08G063-48; C08G063-91

US PATENT CLASSIF.: 525054100; 528230000; 525526000

CLASSIFICATION: 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 63

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| US 2004122164 | A1 | 20040624 | US 2003-661268 | 20030912 |
| KR 2003048293 | A | 20030619 | KR 2001-78244 | 20011211 |
| US 2003153694 | A1 | 20030814 | US 2002-303260 | 20021125 |
| US 2004034188 | A1 | 20040219 | US 2003-431294 | 20030507 |
| US 6916962 | B2 | 20050712 | | |
| US 2004147687 | A1 | 20040729 | US 2003-715607 | 20031118 <-- |
| PRIORITY APPLN. INFO.: | | | KR 2001-78244 | A 20011211 |
| | | | US 2002-303260 | A2 20021125 |
| | | | US 2003-431294 | A2 20030507 |
| | | | US 2002-348452P | P 20020116 |
| | | | US 2002-381503P | P 20020517 |
| | | | US 2002-407741P | P 20020903 |
| | | | US 2003-661268 | A2 20030912 |

PATENT CLASSIFICATION CODES:

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| US 2004122164 | ICM | C08G065-00 |
| | ICS | C08G063-48; C08G063-91 |
| | INCL | 525054100; 528230000; 525526000 |
| US 2004122164 | NCL | 525/054.100; 528/230.000; 525/526.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U |
| US 2003153694 | NCL | 525/523.000; 558/260.000; 560/157.000; 564/060.000 |
| | ECLA | C08G065/329; C08G065/331; C08G065/333U |
| US 2004034188 | NCL | 528/230.000; 528/250.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U |
| US 2004147687 | NCL | 525/389.000; 525/403.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U <-- |

ABSTRACT:

The monofunctional polyethylene glycol aldehydes are used for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived.

SUPPL. TERM: polyethylene glycol aldehyde pegylated protein conjugate
INDEX TERM: Proteins
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: Polyoxyalkylenes, preparation
ROLE: BUU (Biological use, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 14697-46-2, Pentane-1,2,5-triol
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(cyclization; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 112344-11-3DP, Acrylic acid-ethylene oxide graft copolymer, reaction products with hydroxysuccinimide, aminodiethoxypropane, and aldehyde formation
533881-58-2P 544706-95-8P
544706-97-0P 544706-99-2P
544707-02-0P 544707-05-3P
544708-06-7P

ROLE: IMF (Industrial manufacture); PREP (Preparation)
(polyethylene glycol-aldehydes for conjugates with proteins)

INDEX TERM: 67665-19-4P 92451-01-9P
544706-94-7P 544706-96-9P
544706-98-1P 544707-00-8P
544707-01-9P 544707-04-2P
544707-06-4P

ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 1659-31-0, Di-2-pyridyl carbonate 9004-74-4
, Methoxypolyethylene glycol

ROLE: RCT (Reactant); RACT (Reactant or reagent)
(polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 135649-01-3P 146167-55-7P

ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(reaction with aminodiethoxypropane; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 124661-64-9P 174569-25-6P

ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(reaction with aminodimethoxybutane; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 58320-73-3P

ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(reaction with dioxolanedimethylpropanol; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 80506-64-5

ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction with dipyridiyl carbonate; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 67665-18-3P

ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 125220-94-2

ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 6066-82-6, N-Hydroxysuccinimide

ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction with methoxypolyethylene glycol acetic acid; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 544707-03-1P

ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(reaction with methoxypolyethylene glycol aminoethyl ether; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 19060-15-2

ROLE: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol succinimidyl acetal; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 41365-75-7

ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction with methoxypolyethylene glycol succinimidyl acetate; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 105-36-2, Ethyl bromoacetate 7693-46-1, 4-Nitrophenylchloroformate 32315-10-9, Triphosgene

ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction with methoxypolyethylene glycol; polyethylene glycol aldehydes for conjugates with proteins)

INDEX TERM: 6318-30-5

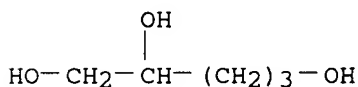
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction with nitrophenylchloroformate; polyethylene glycol aldehydes for conjugates with proteins)

IT 14697-46-2, Pentane-1,2,5-triol

RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization; polyethylene glycol aldehydes for conjugates with proteins)

RN 14697-46-2 CAPLUS

CN 1,2,5-Pentanetriol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 112344-11-3DP, Acrylic acid-ethylene oxide graft copolymer, reaction products with hydroxysuccinimide, aminodiethoxypropane, and aldehyde formation 533881-58-2P 544706-95-8P

544706-97-0P 544706-99-2P 544707-02-0P

544707-05-3P 544708-06-7P

RL: IMF (Industrial manufacture); PREP (Preparation)
(polyethylene glycol aldehydes for conjugates with proteins)

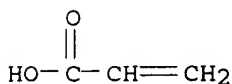
RN 112344-11-3 CAPLUS

CN 2-Propenoic acid, polymer with oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 79-10-7

CMF C3 H4 O2



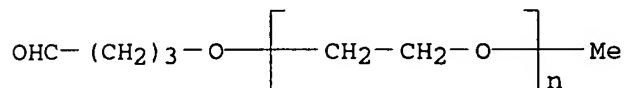
CM 2

CRN 75-21-8

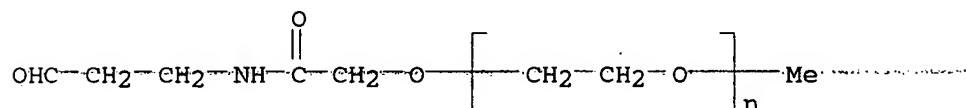
CMF C2 H4 O



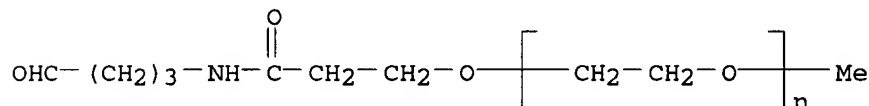
RN 533881-58-2 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -(4-oxobutoxy)- (9CI) (CA INDEX NAME)



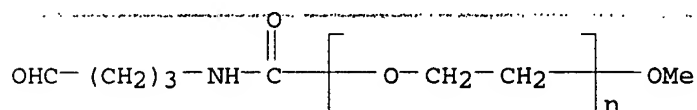
RN 544706-95-8 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



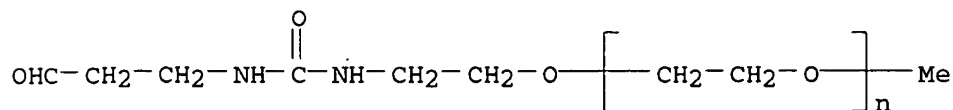
RN 544706-97-0 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



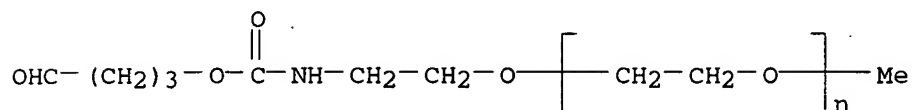
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 CN Poly(oxy-1,2-ethanediyl), α -[[[4-oxobutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)



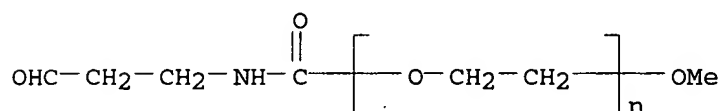
RN 544707-02-0 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



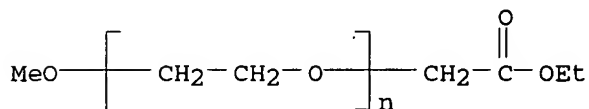
RN 544707-05-3 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



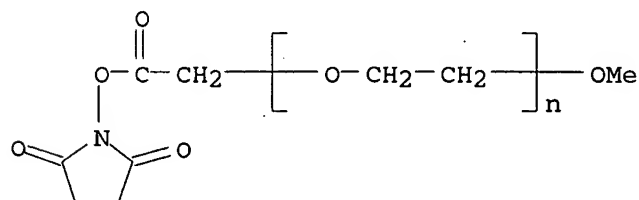
RN 544708-06-7 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[(3-oxopropyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)



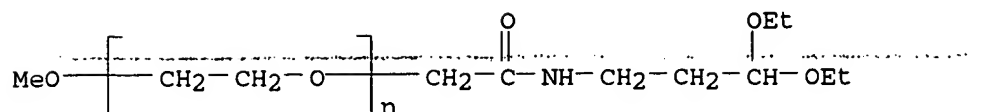
IT 67665-19-4P 92451-01-9P 544706-94-7P
 544706-96-9P 544706-98-1P 544707-00-8P
 544707-01-9P 544707-04-2P 544707-06-4P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (polyethylene glycol aldehydes for conjugates with proteins)
 RN 67665-19-4 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -(2-ethoxy-2-oxoethyl)- ω -methoxy- (9CI) (CA INDEX NAME)



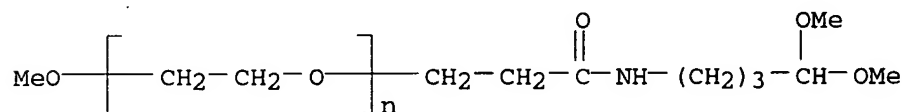
RN 92451-01-9 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[2-[(2,5-dioxo-1-pyrrolidinyl)oxy]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)



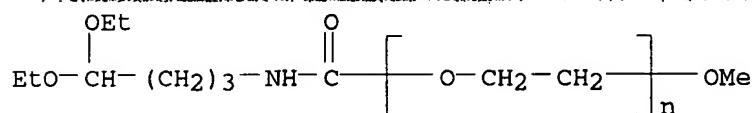
RN 544706-94-7 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[2-[(3,3-diethoxypropyl)amino]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)



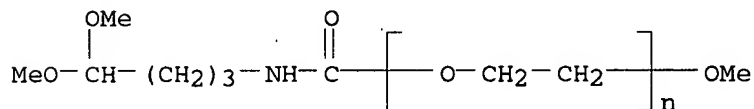
RN 544706-96-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-[(4,4-dimethoxybutyl)amino]-3-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME)

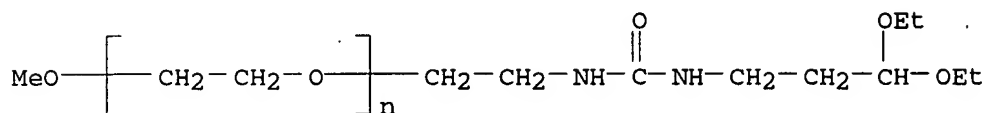
RN 544706-98-1 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[[(4,4-diethoxybutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-00-8 CAPLUS

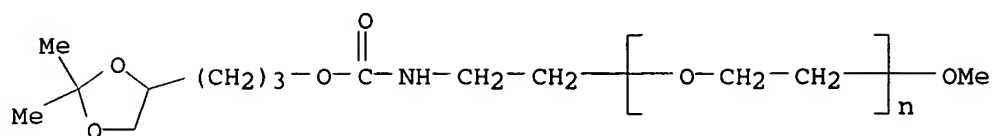
CN Poly(oxy-1,2-ethanediyl), α -[[[(4,4-dimethoxybutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[(3,3-diethoxypropyl)amino]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

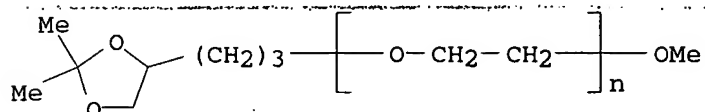
RN 544707-04-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propoxy]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)



RN 544707-06-4 CAPLUS

Poly(oxy-1,2-ethanediyl), α -[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propyl]- ω -methoxy- (9CI) (CA INDEX NAME)



IT 1659-31-0, Di-2-pyridyl carbonate 9004-74-4,

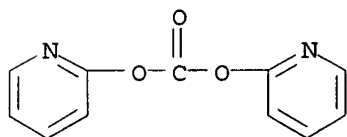
Methoxypolyethylene glycol

RL: RCT (Reactant); RACT (Reactant or reagent)

(polyethylene glycol aldehydes for conjugates with proteins)

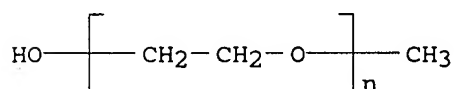
RN 1659-31-0 CAPLUS

CN 2-Pyridinol, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)



RN 9004-74-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -hydroxy- (9CI) (CA INDEX NAME)



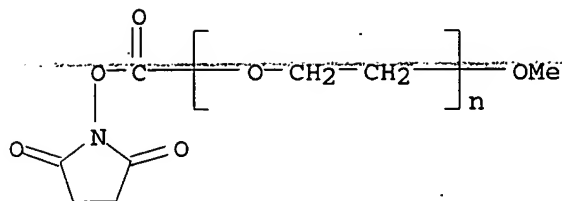
IT 135649-01-3P 146167-55-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

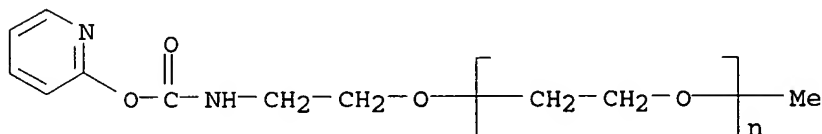
(reaction with aminodiethoxypropane; polyethylene glycol aldehydes for conjugates with proteins)

RN 135649-01-3 CAPLUS

| | | |
|----|--|-----------------|
| CN | Poly(oxy-1,2-ethanediyl), α -[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]- ω -methoxy- (9CI) | (CA INDEX NAME) |
|----|--|-----------------|



RN 146167-55-7 CAPLUS

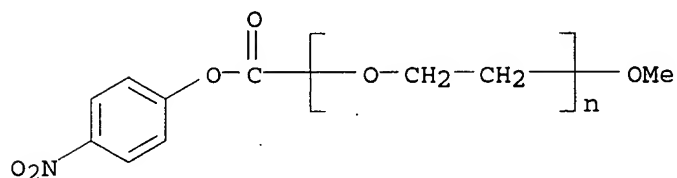
CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[(2-pyridinyloxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

IT 124661-64-9P 174569-25-6P

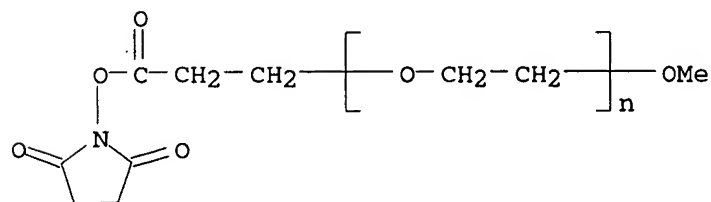
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with aminodimethoxybutane; polyethylene glycol aldehydes for conjugates with proteins)

RN 124661-64-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-nitrophenoxy)carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 174569-25-6 CAPLUS

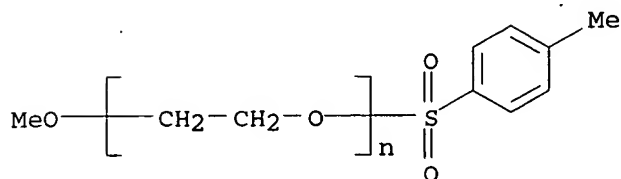
CN Poly(oxy-1,2-ethanediyl), α -[3-[(2,5-dioxo-1-pyrrolidinyloxy)-3-oxopropyl]- ω -methoxy]- (9CI) (CA INDEX NAME)

IT 58320-73-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with dioxolanedimethylpropanol; polyethylene glycol aldehydes for conjugates with proteins)

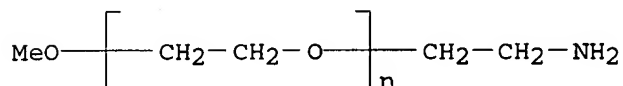
RN 58320-73-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-methylphenyl)sulfonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

IT 80506-64-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with dipyridiyl carbonate; polyethylene glycol aldehydes for conjugates with proteins)

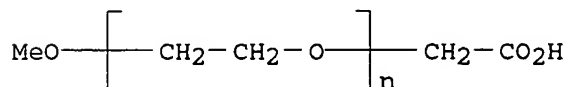
RN 80506-64-5 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-aminoethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

IT 67665-18-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for conjugates with proteins)

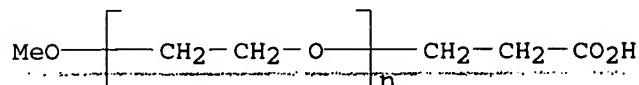
RN 67665-18-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

IT 125220-94-2

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for conjugates with proteins)

RN 125220-94-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-carboxyethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

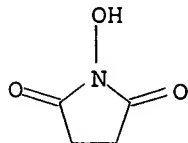
IT 6066-82-6, N-Hydroxysuccinimide

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol acetic acid; polyethylene glycol aldehydes for conjugates with proteins)

RN 6066-82-6 CAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



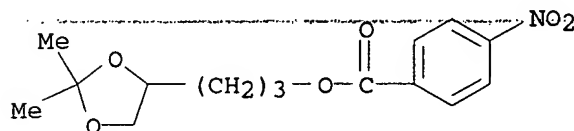
IT 544707-03-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol aminoethyl ether; polyethylene glycol aldehydes for conjugates with proteins)

RN 544707-03-1 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl-, 4-nitrobenzoate (9CI) (CA INDEX NAME)



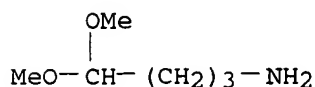
IT 19060-15-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol succinimidyl acetal; polyethylene glycol aldehydes for conjugates with proteins)

RN 19060-15-2 CAPLUS

CN 1-Butanamine, 4,4-dimethoxy- (9CI) (CA INDEX NAME)



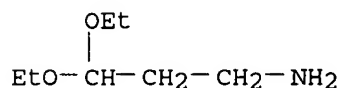
IT 41365-75-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol succinimidyl acetate; polyethylene glycol aldehydes for conjugates with proteins)

RN 41365-75-7 CAPLUS

CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)



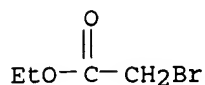
IT 105-36-2, Ethyl bromoacetate 7693-46-1,

4-Nitrophenylchloroformate 32315-10-9, Triphosgene

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with methoxypolyethylene glycol; polyethylene glycol
aldehydes for conjugates with proteins)

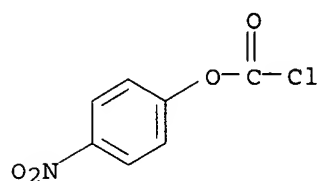
RN 105-36-2 CAPLUS

CN Acetic acid, bromo-, ethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



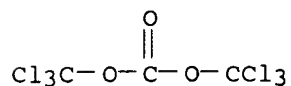
RN 7693-46-1 CAPLUS

CN Carbonochloridic acid, 4-nitrophenyl ester (9CI) (CA INDEX NAME)



RN 32315-10-9 CAPLUS

CN Methanol, trichloro-, carbonate (2:1) (9CI) (CA INDEX NAME)

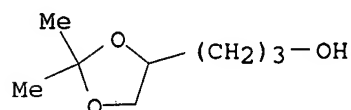


IT 6318-30-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with nitrophenylchloroformate; polyethylene glycol aldehydes
for conjugates with proteins)

RN 6318-30-5 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl- (9CI) (CA INDEX NAME)



L3 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:142840 CAPLUS

DOCUMENT NUMBER: 140:181998

ENTRY DATE: Entered STN: 22 Feb 2004

TITLE: Novel monofunctional polyethylene glycol aldehydes

INVENTOR(S): Rosen, Perry; Nho, Kwang

PATENT ASSIGNEE(S): Sun Bio, Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 16 pp., Cont.-in-part of U.S.

Ser. No. 303,260.

CODEN: USXXCO

DOCUMENT TYPE: Patent
 LANGUAGE: English
 INT. PATENT CLASSIF.:
 MAIN: C08G065-00
 US PATENT CLASSIF.: 528230000; 528250000
 CLASSIFICATION: 35-8 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 63
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| US 2004034188 | A1 | 20040219 | US 2003-431294 | 20030507 |
| US 6916962 | B2 | 20050712 | | |
| KR 2003048293 | A | 20030619 | KR 2001-78244 | 20011211 |
| US 2003153694 | A1 | 20030814 | US 2002-303260 | 20021125 |
| US 2004122164 | A1 | 20040624 | US 2003-661268 | 20030912 |
| US 2004147687 | A1 | 20040729 | US 2003-715607 | 20031118 <-- |
| PRIORITY APPLN. INFO.: | | | KR 2001-78244 | A 20011211 |
| | | | US 2002-348452P | P 20020116 |
| | | | US 2002-381503P | P 20020517 |
| | | | US 2002-407741P | P 20020903 |
| | | | US 2002-303260 | A2 20021125 |
| | | | US 2003-431294 | A2 20030507 |
| | | | US 2003-661268 | A2 20030912 |

PATENT CLASSIFICATION CODES:

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| US 2004034188 | ICM | C08G065-00 |
| | INCL | 528230000; 528250000 |
| US 2004034188 | NCL | 528/230.000; 528/250.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U |
| US 2003153694 | NCL | 525/523.000; 558/260.000; 560/157.000; 564/060.000 |
| | ECLA | C08G065/329; C08G065/331; C08G065/333U |
| US 2004122164 | NCL | 525/054.100; 528/230.000; 525/526.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U |
| US 2004147687 | NCL | 525/389.000; 525/403.000 |
| | ECLA | C08G065/324; C08G065/329; C08G065/331; C08G065/333U <-- |

ABSTRACT:

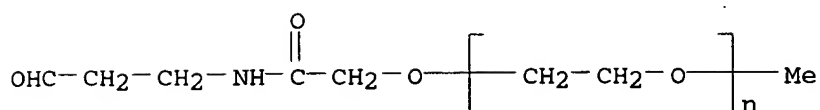
The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

SUPPL. TERM: polyethylene glycol aldehyde therapeutic active protein
 pegylation

INDEX TERM: Polyoxyalkylenes, preparation
 ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
 BIOL (Biological study); PREP (Preparation); USES (Uses)
 (aldehyde derivs.; novel monofunctional polyethylene
 glycol aldehydes for pegylation of therapeutically active
 proteins)

INDEX TERM: Proteins
 ROLE: THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)
 (pegylation of; novel monofunctional polyethylene glycol
 aldehydes for pegylation of therapeutically active

proteins)
INDEX TERM: 544706-95-8P
ROLE: IMF (Industrial manufacture); PREP (Preparation)
(novel monofunctional polyethylene glycol aldehydes for
pegylation of therapeutically active proteins)
INDEX TERM: 6318-30-5P 58320-73-3P 67665-18-3P
, Methoxypolyethylene glycol acetic acid 67665-19-4P
, Methoxypolyethylene glycol ethyl acetate
124661-64-9P 135649-01-3P
146167-55-7P 544706-94-7P
544706-96-9P 544707-00-8P
544707-01-9P 544707-03-1P
544707-04-2P 544707-06-4P
658083-74-0P 658083-75-1P
ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)
(novel monofunctional polyethylene glycol aldehydes for
pegylation of therapeutically active proteins)
INDEX TERM: 314065-74-2DP, Acrylic acid-ethylene oxide graft
copolymer methyl ether, ester with N-hydroxysuccinimide,
displacement reaction products with 1-amino-4,4-
dimethoxybutane, deacetalized compds. 533881-58-2P
544706-97-0P 544706-99-2P
544707-02-0P 544707-05-3P
544708-06-7P
ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
BIOL (Biological study); PREP (Preparation); USES (Uses)
(novel monofunctional polyethylene glycol aldehydes for
pegylation of therapeutically active proteins)
INDEX TERM: 67-64-1, Acetone, reactions 98-59-9, Tosyl
chloride 105-36-2, Ethyl bromoacetate
1659-31-0, Di-2-pyridyl carbonate 6066-82-6
, N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl
chloroformate 9004-74-4, Methoxypolyethylene
glycol 14697-46-2, Pentane-1,2,5-triol
19060-15-2 32315-10-9, Triphosgene
41365-75-7 80506-64-5 125220-94-2
, Methoxypolyethylene glycol propionic acid
152552-24-4, Acrylic acid-methoxypolyethylene glycol
graft copolymer 314065-74-2, Acrylic acid-ethylene
oxide graft copolymer methyl ether 314065-74-2D,
Acrylic acid-ethylene oxide graft copolymer methyl ether,
ester with N-hydroxysuccinimide
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(novel monofunctional polyethylene glycol aldehydes for
pegylation of therapeutically active proteins)
IT 544706-95-8P
RL: IMF (Industrial manufacture); PREP (Preparation)
(novel monofunctional polyethylene glycol aldehydes for pegylation of
therapeutically active proteins)
RN 544706-95-8 CAPLUS
CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-oxo-2-[(3-
oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



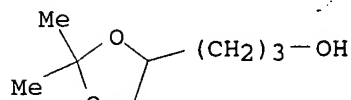
IT 6318-30-5P 58320-73-3P 67665-18-3P,
Methoxypolyethylene glycol acetic acid 67665-19-4P,
Methoxypolyethylene glycol ethyl acetate 124661-64-9P
135649-01-3P 146167-55-7P 544706-94-7P
544706-96-9P 544707-00-8P 544707-01-9P
544707-03-1P 544707-04-2P 544707-06-4P
658083-74-0P 658083-75-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)

(novel monofunctional polyethylene glycol aldehydes for pegylation of
therapeutically active proteins)

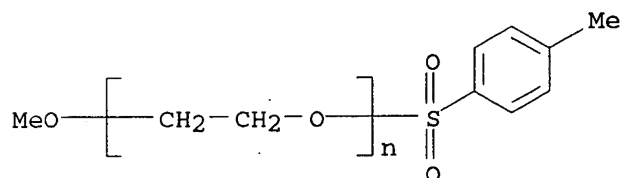
RN 6318-30-5 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl- (9CI) (CA INDEX NAME)



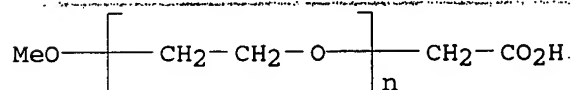
RN 58320-73-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-methylphenyl)sulfonyl]- ω -
methoxy- (9CI) (CA INDEX NAME)



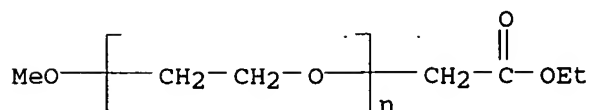
RN 67665-18-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

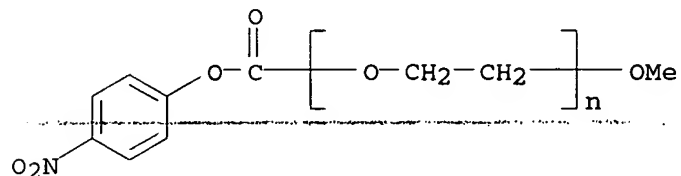


RN 67665-19-4 CAPLUS

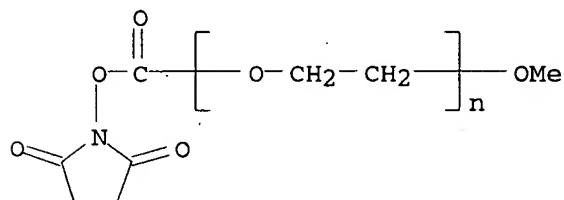
CN Poly(oxy-1,2-ethanediyl), α -(2-ethoxy-2-oxoethyl)- ω -methoxy-
(9CI) (CA INDEX NAME)



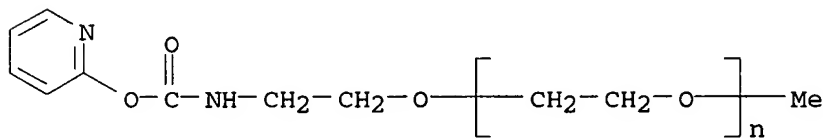
RN 124661-64-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-nitrophenoxy)carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

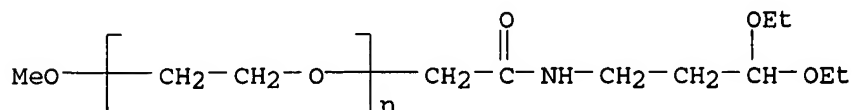
RN 135649-01-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(2,5-dioxo-1-pyrrolidinyloxy)carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 146167-55-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[(2-pyridinyloxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

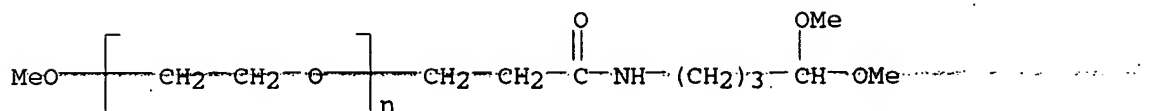
RN 544706-94-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[(3,3-diethoxypropyl)amino]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544706-96-9 CAPLUS

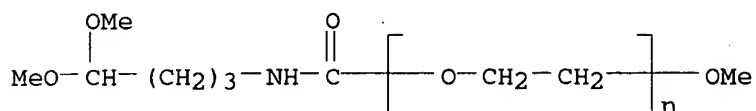
CN Poly(oxy-1,2-ethanediyl), α -[3-[(4,4-dimethoxybutyl)amino]-3-

oxopropyl]-ω-methoxy- (9CI) (CA INDEX NAME)



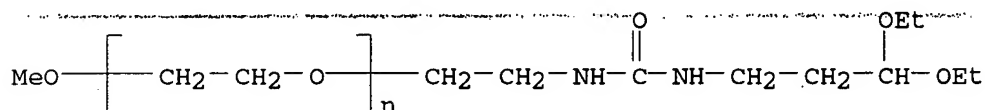
RN 544707-00-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α-[[[(4,4-dimethoxybutyl)amino]carbonyl]-ω-methoxy- (9CI) (CA INDEX NAME)



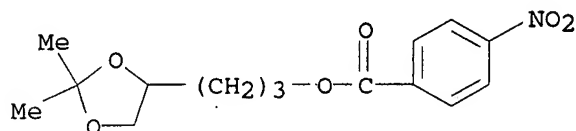
RN 544707-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α-[2-[[[(3,3-diethoxypropyl)amino]carbonyl]amino]ethyl]-ω-methoxy- (9CI) (CA INDEX NAME)



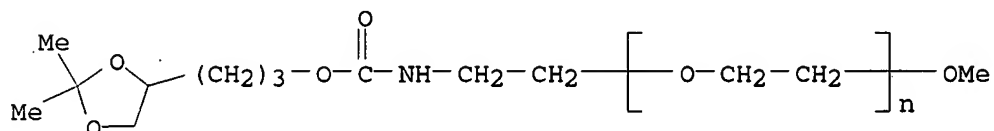
RN 544707-03-1 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl-, 4-nitrobenzoate (9CI) (CA INDEX NAME)



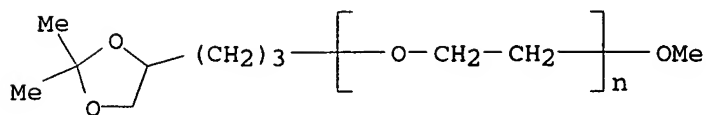
RN 544707-04-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α-[2-[[[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propoxy]carbonyl]amino]ethyl]-ω-methoxy- (9CI) (CA INDEX NAME)

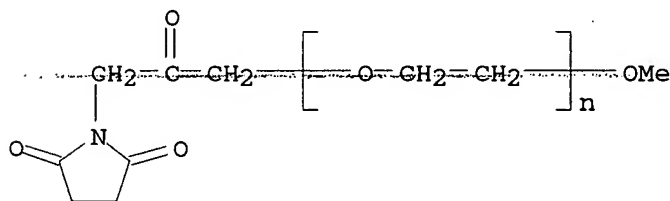


RN 544707-06-4 CAPLUS

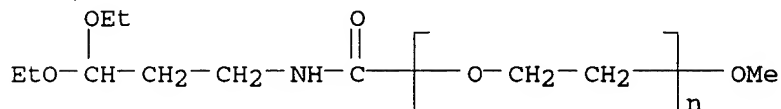
CN Poly(oxy-1,2-ethanediyl), α-[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propyl]-ω-methoxy- (9CI) (CA INDEX NAME)



RN 658083-74-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,5-dioxo-1-pyrrolidinyll)-2-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 658083-75-1 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[3-(3,3-diethoxypropyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

IT 314065-74-2DP, Acrylic acid-ethylene oxide graft copolymer methyl ether, ester with N-hydroxysuccinimide, displacement reaction products with 1-amino-4,4-dimethoxybutane, deacetalized compds.

533881-58-2P 544706-97-0P 544706-99-2P

544707-02-0P 544707-05-3P 544708-06-7P

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 314065-74-2 CAPLUS

CN 2-Propenoic acid, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

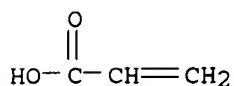
H3C-OH

CM 2

CRN 112344-11-3
 CMF (C3 H4 O2 . C2 H4 O)x
 CCI PMS

CM 3

~~CRN 79-10-7~~
 CMF C3 H4 O2

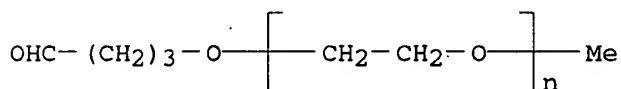


CM 4

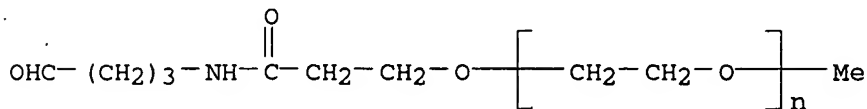
CRN 75-21-8
 CMF C2 H4 O



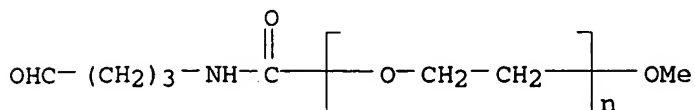
RN ~~533881-58-2~~ CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -(4-oxobutoxy) - (9CI) (CA INDEX NAME)



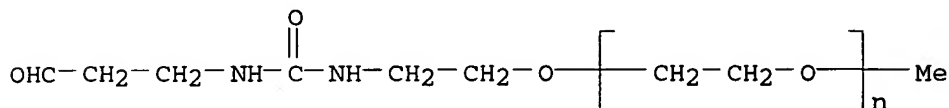
RN 544706-97-0 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-[(4-oxobutyl)amino]propoxy] - (9CI) (CA INDEX NAME)



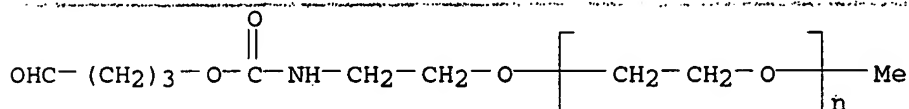
RN 544706-99-2 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[[[(4-oxobutyl)amino]carbonyl]- ω -methoxy] - (9CI) (CA INDEX NAME)



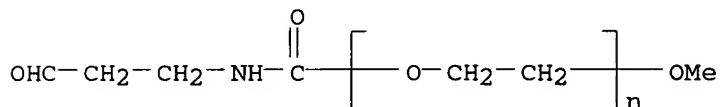
RN 544707-02-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544707-05-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544708-06-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[[(3-oxopropyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

IT 67-64-1, Acetone, reactions 98-59-9, Tosyl chloride

105-36-2, Ethyl bromoacetate 1659-31-0, Di-2-pyridyl

carbonate 6066-82-6, N-Hydroxysuccinimide 7693-46-1,

4-Nitrophenyl chloroformate 9004-74-4, Methoxypolyethylene

glycol 14697-46-2, Pentane-1,2,5-triol 19060-15-2

32315-10-9, Triphosgene 41365-75-7 80506-64-5

125220-94-2, Methoxypolyethylene glycol propionic acid

152552-24-4, Acrylic acid-methoxypolyethylene glycol graft

copolymer 314065-74-2, Acrylic acid-ethylene oxide graft

copolymer methyl ether 314065-74-2D, Acrylic acid-ethylene oxide

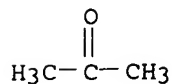
graft copolymer methyl ether, ester with N-hydroxysuccinimide

RL: RCT (Reactant); RACT (Reactant or reagent)

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

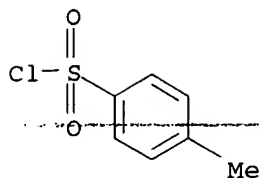
RN 67-64-1 CAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)

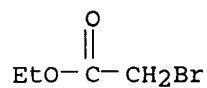


RN 98-59-9 CAPLUS

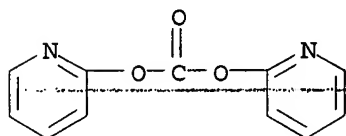
CN Benzenesulfonyl chloride, 4-methyl- (9CI) (CA INDEX NAME)



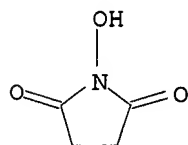
RN 105-36-2 CAPLUS
 CN Acetic acid, bromo-, ethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



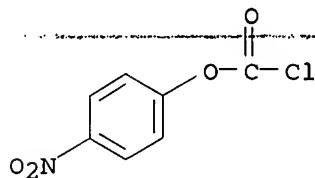
RN 1659-31-0 CAPLUS
 CN 2-Pyridinol, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)



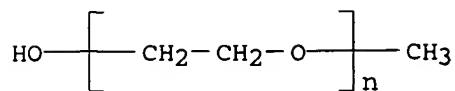
RN 6066-82-6 CAPLUS
 CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



RN 7693-46-1 CAPLUS
 CN Carbonochloridic acid, 4-nitrophenyl ester (9CI) (CA INDEX NAME)

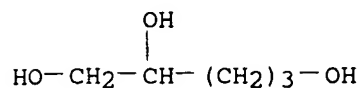


RN 9004-74-4 CAPLUS
 CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (9CI) (CA INDEX NAME)



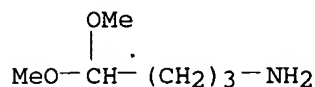
RN 14697-46-2 CAPLUS

CN 1,2,5-Pentanetriol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



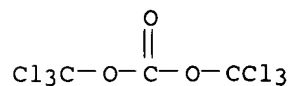
RN 19060-15-2 CAPLUS

CN 1-Butanamine, 4,4-dimethoxy- (9CI) (CA INDEX NAME)



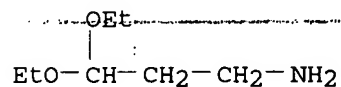
RN 32315-10-9 CAPLUS

CN Methanol, trichloro-, carbonate (2:1) (9CI) (CA INDEX NAME)

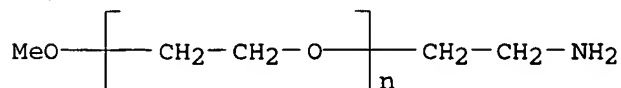


RN 41365-75-7 CAPLUS

CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)

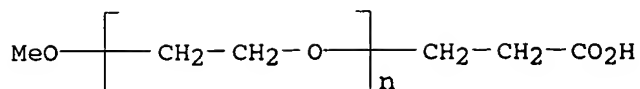


RN 80506-64-5 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-aminoethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)

RN 125220-94-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-carboxyethyl)- ω -methoxy- (9CI)
(CA INDEX NAME)



RN 152552-24-4 CAPLUS

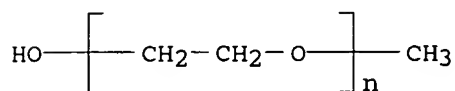
CN 2-Propenoic acid, polymer with α -methyl- ω -hydroxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

CRN 9004-74-4

CMF (C2 H4 O)_n C H4 O

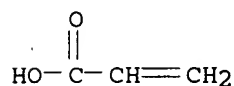
CCI PMS



CM 2

CRN 79-10-7

CMF C3 H4 O2



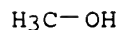
RN 314065-74-2 CAPLUS

CN 2-Propenoic acid, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O



CM 2

CRN 112344-11-3

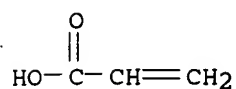
CMF (C3 H4 O2 . C2 H4 O)_x

CCI PMS

CM 3

CRN 79-10-7

CMF C3 H4 O2



CM 4

CRN 75-21-8

CMF C2 H4 O

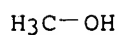
RN ~~314065-74-2~~ CAPLUS

CN 2-Propenoic acid, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O



CM 2

CRN 112344-11-3

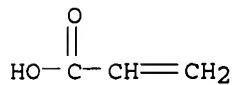
CMF (C3 H4 O2 . C2 H4 O)x

CCI PMS

~~CM 3~~

CRN 79-10-7

CMF C3 H4 O2



CM 4

CRN 75-21-8

CMF C2 H4 O



